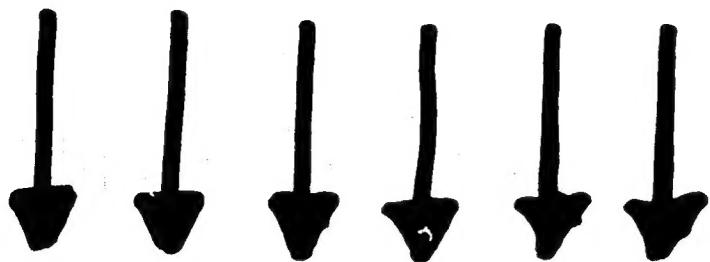


HERE IT IS!



REEL

128

From

FEDOTOV, V.S.

"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000412810

REDOUOV, V. S.

Dissertation: "Geomorphology and Contemporary Processes of Relief Formation of the Central Part of the Kuznets Ala-Tau." Cand Geog Sci, Moscow State Pedagogical Inst, Moscow, 1953.
Referativnyy Zhurnal--Geologiya, Geografiya, Moscow, Jul 54.

SO: SUM No. 356, 25 Jan 1955

APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000412810C

FEDOTOV, V. S.
USSR/Geology

Card 1/1

Authors : Kriger, N. I., and Fedotov, V. S.
Title : Loess (rocks) found at the Oka river basin
Periodical : Dokl. AN SSSR, 96, Ed. 2, 367 - 370, May 1954
Abstract : Judging by the stratification, the loess discovered at the Oka river basin can be divided into the following categories: water-separating loess, beam type loess and loess of river beds. Basic data regarding the properties of fluvioglacial loess of water separating sections (terrace-like plateau) are included. Twenty three references; 1 USSR dating 1892. Table.
Institution :
Presented by : Academician V. A. Obruchev, December 29, 1953

FEDOTOV, V.S.

Country : USSR

Category: Cultivated Plants. Fruits. Berries.

M

Abs Jour: RZhBiol., No 22, 1958, No 100477

Author : Fedotov, V.S.

Inst :

Title : Terracing of the Slopes for Vineyards.

Orig Pub: Sadovodstvo, vinogradarstvo i vinodeliye Moldavii,
1957, No 6, 37-39

Abstract: The effect of terracing, carried out in 1953
according to P. V. Ivanov method, on the pheno-
menon of erosion is characterized. It is noted
that with precipitation of 25-35 millimeters,
a longitudinal run-off causing wash-outs is
observed. It is recommended to impart to the

Card : 1/3

M-180

FEDOTOV V. S.

COUNTRY : USSR
 CATEGORY : Cultivated Plants. Fruits. Berries. M

ARS. JOUR. : RZhBiol., No. 23 1958. No. 104809

AUTHOR : Fedotov, V. S.
 INST. : Moldavian SSR, AS USSR
 TITLE : Preliminary of the Studies on the Terracing of
 Slopes for Vineyards.

ORIG. PUB. : Izv. Mold. fil. na SSSR, 1957, No. 9 (42), 85-103

ABSTRACT : In Moldavia, especially in its central regions, there are considerable areas of gentle and steep slopes which are either insufficiently utilized in agriculture or are not utilized at all. The usual cultivation of these slopes for vineyards leads to a strong development of erosion processes. In 1953, terracing of a 15-hectare slope with the grade of 25° was done in Bul'boksiy Rayon according to the system developed at the Soil Institute of the affiliate of the Academy of Sciences. In the spring of 1954, the planting of the grapevines was carried out. In the summer of 1954, there were heavy downpours (up to 27

CARD: 1/2

COUNTRY :
 CATEGORY : M

ARS. JOUR. : RZhBiol., No. 1958, No. 104809

AUTHOR :
 INST. :
 TITLE :
 ORIG. PUB. :
 ABSTRACT : (in a 24-hour period), and in the summer of 1955 - an increased amount of precipitation. The general firmness of terraces of 3 meters in width and 6° grade proved to be high. A detailed characteristic of the water and nutritional conditions of the terraces is cited. The average reserve of moisture in one-meter layer of the terrace soil was about 100 mm and the maximum 168 mm. -- I. K. Fortunatov

CARD: 2/2

SMIRNOVA, I.N.; BALEZIN, S.A.; GOLOVANOV, K.N.; Prinimali uchastiye:
DEM'YANOV, L.A.; TURKEVICH, A.I.; VOROB'YEV, P.I.; FEDOTOV, V.S.;
CHURILOV, Ye.M.

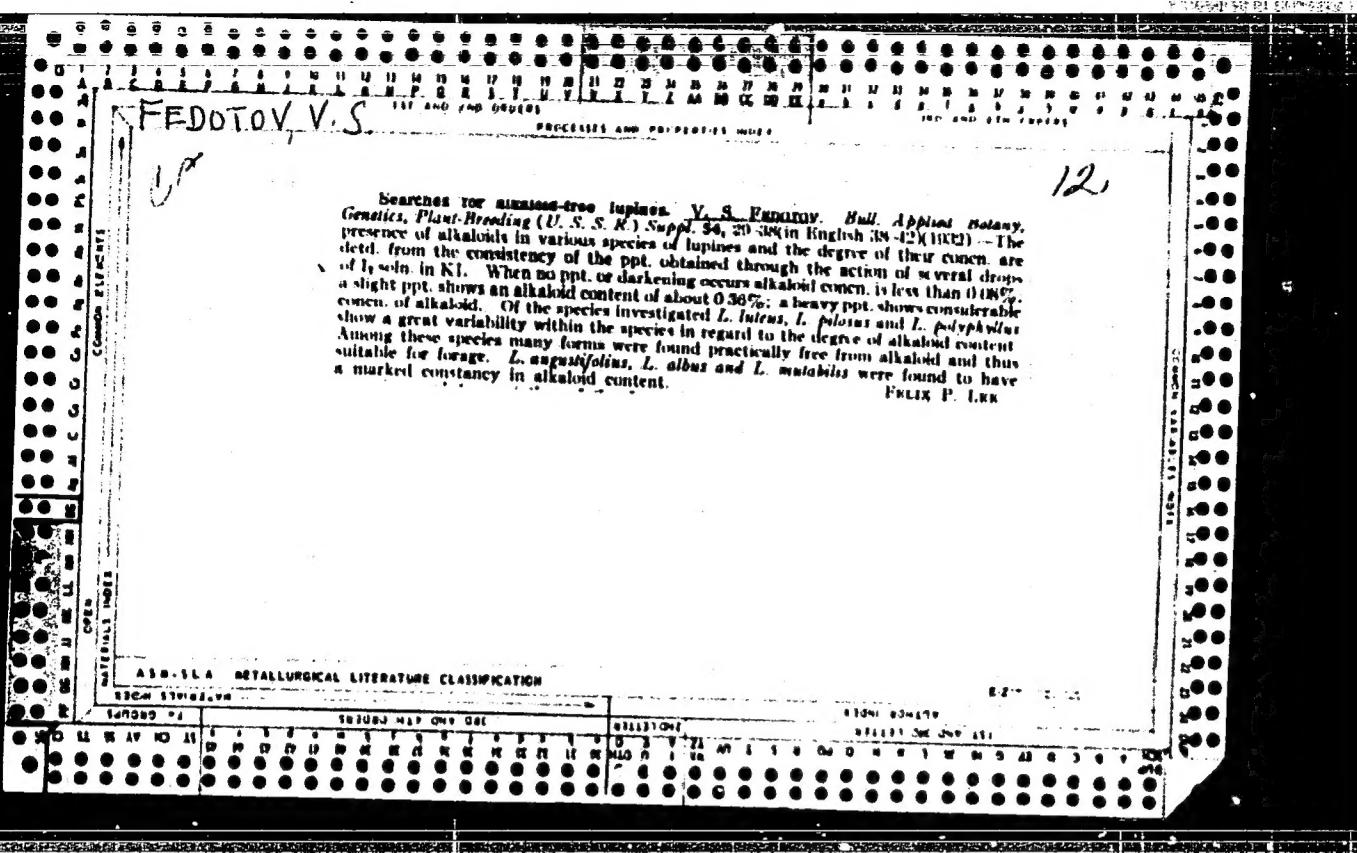
Effect of organic additives in fuel on the corrosion and wear
of internal combustion engines. Uch. zap. MGPI no.146:127-146
'60. (MIRA 15:4)
(Gas and oil engines--Corrosion) (Addition reactions)

FEDOTOV, V.S.

Remote hybridization in the vetch tribe of the Leguminosae
family. Biul. Glav. bot. sada no.53:23-27 '64.

(MIRA 17:6)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva
tsentral'nykh rayonov nechernozemnoy zony Nemchinovka,
Moskovskoy oblasti.



FEDOTOV, V. S.

The production of lupine seeds Moskva, Gos. izd-vo selkhoz lit-ry, 1954. 87 p.
(V pomoshch' agronomu na proizvodstve)

FEDOTOV, V.S.

FEDOTOV, V.S.

Crop fallow on sandy soils. Zemledelie 5 no. 5:49-51 Ny '57.
(MLRA 10:7)
(Latvia--Fallowing)

Country : USSR
Category: Cultivated Plants. Fodders.

M

Abs Jour: RZhBiol., No 11, 1958, No 48998

Author : Pedotov, V.S.

Inst : -

Title : On Seed Growing of Podder Lupine

Orig Pub: Seloktsiya i semenovodstvo, 1957, No 6, 43-47

Abstract: No abstract.

Card : 1/1

M-93

FEDOTOV, V. S. Cand Agr Sci -- "Study of problems of terracing ^{the} ~~of~~ slopes ~~and~~ under vineyards in Moldaviya." Voronezh, 1980 (Min of Agr RSFER. Voronezh Agr Inst). (KL, 1-61, 203)

-322-

FEDOTOV, V.S.

[Peas] Gorokh. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1960.
257 p. (MIRA 14:10)

(Peas)

FEDOTOV, V.S.; PARNO, L.I., red.; TARAKANOVA, V.N., tekhn. red.

[Terracing slopes for orchards and vineyards in Moldavia]
Terrasirovaniye sklonov pod sady i vinogradniki v Moldavii.
Kishinev, Gos. izd-vo "Kartia moldoveniasko," 1960. 69 p.

(MIRA 15:4)

(Moldavia--Terracing) (Moldavia--Fruit culture)
(Moldavia--Grapes)

FEDOTOV, Viktor Semenovich; PANIN, V.Ya., red.; BRAGINA, L.P., red.;
POLONSKIY, S.A., tekhn. red.

[Terracing slopes for orchards and vineyards in Moldavia]Ter-
rasirovanie sklonov pod sady i vinogradniki v Moldavii. Kishi-
nev, Izd-vo "Shtintsa," 1961. 174 p. (MIRA 16:2)
(Moldavia—Terracing) (Moldavia—Fruit culture)

FEDOTOV, Vasiliy Stepanovich, kand. veter. nauk; FEDOTOVSKIY, A.P., red.; SYCHEVA, V.A., tekhn. red.

[The "Tundra" Collective Farm in the seven-year plan] Kol-khoz "Tundra" v semiletke. Murmansk, Murmanskoe knizhnoe izd-vo, 1961. 28 p. (MIRA 16:6)
(Murmansk Province--Stock and stockbreeding)

FEDOTOV, Vasiliy Steparovich, kand. veter. nauk; SOKOLOVA, R.K.,
red.; RELYAKOV, N.F., tekhn. red.

[Antibiotics and biogenic stimulators in animal husbandry]
Antibiotiki i biostimulatory v zhivotnovodstve. Murmansk,
Murmanskoe knizhnoe izd-vo, 1961. 28 p. (MIRA 16:6)
(Stock and stockbreeding) (Antibiotics)
(Tissue extracts)

FEDOTOV, V.S., kandidat veterinarnykh nauk.

Sheds as a measure for controlling nacobacillosis in reindeer.
Veterinariia 30 no.8:50-53 Ag '53. (MLRA 6:8)

1. Nauchno-issledovatel'skiy institut polyarnogo zemledeliya,
zhivotnovodstva i promyslovoogo khozyaystva.

12/10/86 11:20
FEDOTOV, V.S., kand. vet. nauk.

On a collective farm beyond the Arctic Circle. Nauka i pered. op.
v sel'khoz. 7 no.12:59-60 D '57. (MIRA 11:1)
(Arctic regions—Collective farms)

FEDOTOV, V., kand. vet. nauk (Murmanskaya oblastnaya otdeleniye stantsiya).

On a collective deer farm. Nauka 1 pered. op. v sel'khoz. 8 no.3;
28-29 Mr '58. (MIRA 11:3)
(Murmansk Province--Deer)

FEDOTOV, V. S.

Opyt vypasa olenei v izgorodiakh i mery bor'by s nekro-batsillezom (Tending deer in fenced-in areas, and control measures of necrobacillosis). Murmansk. Kn. izd., 1959, 42 pages with illustrations. Price 85 k., 3000 copies.

FEDOTOV, V.3., kand. veter. nauk; FEDOTOVSKIY, A.P., red.;
BELYAYEV, N.F., tekhn. red.

[Pasturing reindeer in enclosures and measures for necro-
bacillosis control] Opyt vypasa olenei v izgorodiakh i
mery bor'by s nekrobatsillezom. Murmansk, Murmanskoe
knizhnoe izd-vo, 1959. 40 p. (MIRA 17:1)

1. TAKHTAROV, Ye. N. and FEDOTOV, V. V.
2. USSR (600)
4. Sand - Zhitomir Province
7. Geological report of the Dnepropetrovsk party for vitreous sands (on the activities of 1945). (Abstract.) Izv.Glav.upr.gool.fon. no. 3, 1947.
9. Monthly Lists of Russian Acquisitions, Library of Congress, March 1953, Unclassified.

YERMOLATEV, P.V.; FEDOTOV, V.V.; SHCHERBAKOV, N.P.; SAYTANIDI, L.D.,
tekhn. red.

[Decrees and instructions on labor for agricultural workers]
Sbornik postanovlenii i rasporiashchenii po trudu dlia rabot-
nikov sel'skogo khoziaistva. Moskva, Izd-vo M-va sel'skogo
khoz. RSFSR, 1958. 252 p. (MIRA 12:6)

1. Russie (1917- R.S.F.S.R.) Upravleniye normirovaniya truda
i zarabotnoy platy.
(Agricultural laws and legislation)

FEDOTOV, V.V., mayor meditsinskoy sluzhby

Estimation of the number of litter bearers for evacuation of
the wounded. Voen.-med.zhur. no.6:18-19 Je '59.

(MIRA 12:9)

(WOUNDED AND SICK

evacuation, estimation of number of litter
bearers (Rus))

FEDOTOV, V.V., mayor meditsinskoy sluzhby

Controlling unreal attitudes in carrying out instruction in naval
medicine. Voen.-med. zhur. no.8:14-17 Ag '60. (MIRA 14:7)
(MEDICEN, NAVAL STUDY AND TEACHING)

L 20964-66 EWT(1) SCTB DD

ACCESSION NR: AP5022850

UR/0375/65/000/009/0060/0061

AUTHOR: Myasnikov, A. P. (Docent) (Lieutenant Colonel of medical service); Fedotov, V. V. (Candidate of medical sciences) (Lieutenant Colonel of medical service)

TITLE: Evaluation of conditions in compartments of a sunken submarine by a physician-physiologist

SOURCE: Morskoy sbornik, no. 9, 1965, 60-61

TOPIC TAGS: human physiology, submarine, rescue operation, survival training, submarine training

ABSTRACT: The authors propose a graphic presentation of rescue operations in a sunken submarine, stating that existing tables are not sufficiently descriptive and are incomplete in their evaluation of an emergency situation (see Fig. 1 of the Enclosure). Such a graphic system could be put on a form 50 x 100 cm. The authors go on to propose hypothetical situations which could occur in a sunken submarine, for the benefit of a physician-physiologist involved in rescue operations. The benefit of a graphic approach to submarine rescue operations is that it aids in developing clear-cut habit patterns in officers and saves decision-making time. The authors' approach has been incorporated into the training practice in the Soviet Navy and at the Military Medical Academy imeni Kirov. Orig. art. has: 2 figures.

[CD]

Card 1/3

L 20964-66

ACCESSION NR: AP5022850

ASSOCIATION: none

SUBMITTED: 00

ENCL: 01

SUB CODE: LS, MS

NO REF Sov: 000

OTHER: 000

ATD PRESS: 4114

Card 2/3

L 20964-66

ACCESSION NR: AP5022850

ENCLOSURE: 01

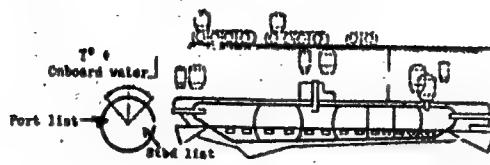


Fig. 1. System for evaluating conditions in compartments of a sunken submarine and the organization of personnel rescue

1. No. of escape hatches							
2. No. of regeneration devices							
3. No. of regenerative agent complexes							
4. Air supply in ventilation system							
5. Water supply							
6. Nations supply							
7. Condition of personnel							
8. Maximum resistance time in compartments	9. Without regeneration						
	10. With utilization of regeneration agents	11. According to a temperature factor					
		12. According to the toxic effect of CO_2					
		13. According to the toxic effect of CO_2					
		14. According to regeneration agent supply					

Card 3/3

MJS

FEDOTOV, V. Ye.

Dissertation: "Investigation of the Work of a Wind Motor With the Impeller Behind the Tower." Cand Tech Sci, Power Engineering Inst imeni G. M. Krzhizhanovskiy, Acad Sci USSR, Moscow, Oct-Dec 53. (Vestnik Akademii Nauk, Moscow, Jun 54)

SO: SUM 318, 23 Dec 1954

FATEYEV, Yefim Mikhaylovich, doktor tekhnicheskikh nauk, professor; ZHELI-GOVSKIY, A.V., kandidat tekhnicheskikh nauk, dotsent, redaktor; MEDOTOV, V.Y., kandidat tekhnicheskikh nauk, retsenzient; MOIEL', B.I., tekhnicheskiy redaktor; SHIKIN, S.T., tekhnicheskiy redaktor.

[Wind motors and their use in agriculture] Vetrodvigateli i ikh primenenie v sel'skom khoziaistve. Izd.2-oe, dop. i perer. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 322 p.
(MLRA 10:6)

1. Chlen-korrespondent Akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina(for Fateyev)

(Wind-mills)

FATEYEV, Ye.M., prof., otv.red.; BYSTRITSKIY, D.N., red.; VASHKEVICH, K.P., red.; KARMISHIN, A.V., red.; SEKTOROV, V.R., red.; YUDOVICH, V.Ye., red.; FRANKFURT, M.O., red.; SHOLOMOVICH, G.I., red.; GOLOVKO, V.N., red.izd-vo; GUSEVA, I.N., tekhn.red.

[Problems in wind power] Voprosy vetroenergetiki. Moskva, Izd-vo Akad.nauk SSSR, 1959. 135 p. (MIRA 12:6)

1. Akademiya nauk SSSR. Energeticheskiy institut. 2. Chlen-korrespondent Vsesoyuznny akademii sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Fateyev).
(Wind power)

FEDOTOV, Ya., kand.tekhn.nauk

Parameters and equivalent circuits of transistors. Radio no.9:
33-36 S '62. (MIRA 15:9)
(Transistors)

FEDOTOV, Ya., kand. tekhn. nauk

Parameters and equivalent networks of transistors. Radio no.10:
37-40 0 '62. (MIRA 15:10)

(Transistors)

FEDOTOV, Ya., kand.tekhn.nauk

Transistor technology and miniature electronic equipment. Radio
no.11:29-32 N '63. (MIRA 16:12)

soony electronics-semiconductor devices

FEDOTOV, Ya. A.

FD-264

Card 1/1 Pub. 90-4/11

Author : Fedotov, Ya. A.

Title : Methods for Calculating Amplifier Circuits Using Transistors

Periodical : Radiotekhnika, 10, 37-43, Aug 1955

Abstract : The author in a general discussion examines the fundamental principles of the control of collector current in a transistor triode and makes observations on the choice of systems of parameters which will characterize transistors and be of value to practical utilization of transistors. He delineates the fields of utilization of junction and point-contact types and discourses on the need for a unified theory of amplifiers (to encompass tube, transistor, dielectric, and magnetic types).

Institution :

Submitted : July 11, 1955

7d/7
FEDOTOV, Yakov Andreyevich; KULIKOVSKIY, A.A., redaktor; BERG, A.I.,
redaktor; DZHIGIT, I.S., redaktor; YELIN, O.G., redaktor; MOZH-
ZHEVELOV, B.N., redaktor; SMIRNOV, A.D., redaktor; TARASOV, F.I.,
redaktor; TRAMM, B.P., redaktor; CHENCHIK, P.O., redaktor;
SHASHMUR, V.I., redaktor.; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Crystal triodes] Kristallicheskie triody. Moskva, Gos.energ.
izd-vo, 1955. 94 p. (Massovaya radiobiblioteka no.216)
(Electron tubes) (MLRA 8:9)

FEDOTOV, Yakov Andreyevich, redaktor; SATANOVSKAYA, B.G., redaktor;
KORUZIN, N.N., tekhnicheskiy redaktor

[Transistors and their use; collected articles] Poluprovodnikovye
pribory i ikh primenenie; sbornik statei. Moskva, Izd-vo "Sovetskoe
radio." No.1. 1956. 622 p.
(Transistors) (MLRA 10:4)

Call Nr: TK7872.T73T42

AUTHOR: Fedotov, Ya. A.

TITLE: Instead of Radio Tubes (Vmesto radiolampy)

PUB. DATA: Izdatel'stvo "Sovetskoye Radio", Moscow, 1957,
63 pp. Number of copies not given

ORIG. AGENCY: None given

EDITOR: Ed. in Chief: Volkova, E. M.

PURPOSE: The pamphlet is intended for large groups of readers
unfamiliar with radio engineering and radio electronics.

COVERAGE: The pamphlet represents a popular exposition of basic
semiconductor materials used in the manufacture of semi-
conductor devices. It describes the diverse fields in
which radio tubes can be used, mentions their short-
comings, and the possibilities emerging in radio elec-
tronics by substituting semiconductor devices for radio
tubes. There are no references and no personalities.

Card 1/2

Instead of Radio Tubes (Cont.)

Call Nr: TK7872.T73T42

TABLE OF CONTENTS

Introduction	3
What are Semiconductors?	5
"Attention! Moscow Speaks"	16
"You will Now Speak with Vladivostok"	24
In Any Weather	30
"Mechanical Brains"	34
Radio Tubes and Their Shortcomings	41
Instead of a Radio Tube	47
Semiconductor Devices Today and Tomorrow	54

AVAILABLE: Library of Congress

Card 2/2

PHASE I BOOK EXPLOITATION 1185

Poluprovodnikovyye pribory i ikh primeneniye; sbornik statey, vyp.
II (Semiconductor Devices and Their Uses; Collection of
Articles, no. 2) Moscow, Izd-vo "Sovetskoye radio," 1957. 398 p.
No. of copies printed not given.

Ed. (title page): Fedotov, Yakov Andreyevich; Ed. (inside book):
Ivanushko, N.D.; Tech. Ed.: Sveshnikov, A.A.

PURPOSE: This book is addressed to physicists and electronics
engineers interested in semiconductor devices and their applica-
tions in electronics.

COVERAGE: This is a collection of articles on semiconductor devices
and their applications. There is an insert containing a circuit
diagram of the measuring instrument described in the article on
p. 331. No personalities are mentioned. There are 84 references,
of which 33 are Soviet (including 3 translations), 1 Swiss, 6
German, 42 English, and 2 French.

Card 1/5

Semiconductor Devices and Their Uses (Cont.) 1185

TABLE OF CONTENTS:

Shmartsev, Yu.V. Producing Germanium for Semiconductor Devices	3
Artyukhova, O.A., Vaksenburg, V.Ya., Petrov, L.A., Saltykova, Ye.S., and Samokhvalov, M.M. New Types of Germanium P-n-P Junction Transistors	46
Kamenetskiy, Yu.A. Equivalent Circuits of Transistors	78
Kozlov, V.A. Obtaining a Family of Volt-Ampere Characteristics for Transistors on an Oscillograph Screen	142
Petrov, L.A., and Syttyy, G.F. Variations in the Parameters of P-n-P Alloy-type Germanium Transistors as a Function of the Material and Quiescent Point	149

Card 2/5

Semiconductor Devices and Their Uses (Cont.) 1185

Petrov, L.A., and Sytyy, G.F. Effect of Resistivity of Germanium on the Temperature Dependence of Parameters of Junction Transistors	161
Borisov, A.I. Ambient Temperature Dependence of Static Volt-Ampere Characteristics of Junction Transistors	169
Popov, I.A. Transient Processes in Junction Transistors During Application of Step Voltages	187
Zakharov, V.N. Methods of Determining Maximum Power Amplification Frequency and Maximum Generated Frequency of Transistors	205
Sherov-Ignatyev, G.P. Selecting Conditions of Power Supply for Type S1D Transistors Used for Amplification of Small Signals	223
Vorob'yeva, Ye.F. Input Impedance of a Point-contact Transistor HF Amplifier With Grounded Base And Detuned Output Circuit	242

Card 3/5

Semiconductor Devices and Their Uses (Cont.) 1185

Garyainov, S.A., and Pripolov, E.Ya. Investigation of a Point-contact Transistor Video Amplifier	263
Kobzev, V.V., and Berestnev, P.D. Problem of Designing High-frequency Self-excited Oscillators Equipped With Junction Transistors	288
Tarasov, V.L., and Shevyrtalov, Yu.B. Investigation of Transistor Detectors	298
Konev, Yu.I. Phase-sensitive Transistor Amplifiers	317
Kopylovskiy, B.D., and Sytyy, G. F. Measurement of Modulus and Phase of Current Amplification Factor in Transistors at High Frequency	331
Gal'perin, Ye.I., Gordonov, A.Yu., and Fomchenkov, V.M. Design of Point-contact Transistor Trigger Circuits Ensuring Interchangeability	340

Card 4/5

Semiconductor Devices and Their Uses (Cont.)	1185
Zalkind, A.B., Matyukhin, N.Ya., and Rosnitskiy, O.V. Current Pulse Switching With Transistors	353
Valitov, R.A., Aleksandrov, A.I., and Akulov, I.I. Transistorized Measuring Instruments	366
Selivanov, S.A., and Selivanov, A.S. Transistorized Radiomega-phone	377
Valitov, R.A., and Simonov, Yu.L. Frequency Stabilization of Transistorized Oscillators With the Aid of Ticon[trade name] and Varicord[barium titanate] Capacitors	383
Voinov, B.S. Miniature Wide-band Tank Circuit	386

AVAILABLE: Library of Congress

JP/mfd
2-12-59

Card 5/5

FEDOTOV, Ya. A.

109-9-12/15

AUTHOR: Fedotov, Ya. A.

TITLE: Frequency Characteristics of Junction Transistors.
(Chastotnyye svoystva ploskostnykh triodov)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, Nr 9,
pp.1189 - 1199 (USSR)

ABSTRACT: One of the very important parameters of a junction transistor is its current amplification factor, α and its limiting frequency, f_α , which is the frequency at which α drops to 70% of its low frequency value. The factor α , as a function of frequency, is normally measured in a grounded-base circuit (see Fig.1) in which the variable frequency input voltage, E , is applied to the emitter through a large resistance, R , and the output signal is measured across a small resistance R_H connected in the collector circuit.

The current flowing into the transistor is first determined by disconnecting the transistor from the circuit and connecting R and R_H in series. The transistor is then inserted into the circuit and its collector current is determined by measuring the voltage across R_H . It is shown, however,

Card 1/4

109-9-12/15

Frequency Characteristics of Junction Transistors.

that the measurement of α in the above circuit is inaccurate, especially at higher frequencies due to the presence of stray capacitances between the emitter and collector, emitter and ground, and collector and ground. The error is also a function of the input resistance of the transistor. It is concluded by examining some high frequency transistors that at frequencies of the order of 30 - 40 Mc/s the error in the measurement of α may be as high as 20% (see Fig.4). Furthermore, it is found that an indirect measurement of α and f_a by measuring the limiting frequency f_b of a grounded emitter circuit and evaluating f_a from

$f_b = f_a(1 - \alpha_0)$ (Eq.(7)) is also inaccurate (see Fig.6). It is concluded therefore that the frequency characteristic of a transistor can better be represented by its maximum power amplification, K_{pMAKC} . This is an invariant for a given transistor and it is expressed by:

$$K_{pMAKC} \approx \frac{0.22}{\omega^2} \left(\frac{\alpha_0 \omega_a}{r_d C_K} \right) \quad (\text{Eq.(11)}) , \quad \text{or by :}$$

Card 2/4

Frequency Characteristics of Junction Transistors.

$K_{pMAKC} = \frac{M}{f^2}$ (Eq.(12)), where $4\pi^2 M = \frac{0.22 \alpha_0 \omega_a}{r_d C_K}$,

where r_d is the base resistance and C_K is the collector capacitance of the transistor. Parameter M in Eq.(12) can be regarded as a figure of merit for the transistor. From the above it should be clear that a frequency at which the maximum power amplification of the transistor becomes unity can be regarded as a limiting frequency. This frequency would also be equal to the transistor maximum oscillation frequency. In this manner it would also be possible to determine f_a indirectly ($f_{max} = \sqrt{M}$). Maximum amplification of a large number of transistors as a function of frequency was measured and it was found to obey the law as given by Eq.(12) (see Fig.8). This law is valid only at comparatively high frequencies. The limiting frequency was also determined by means of an oscillator (see Fig.9) and was found to be almost coincident with the frequency at which the maximum gain becomes unity.

Card 3/4

109-9-12/15

Frequency Characteristics of Junction Transistors.

There are 9 figures, 7 references, 3 of which are Slavic.

SUBMITTED: October 11, 1956.

AVAILABLE: Library of Congress.

Card 4/4

AUTHOR: FEDOTOV, Ya.K.

TITLE: A-U Sci Conf dedicated to "Radio Day," Moscow, 20-25 May 1957.
"Frequency Properties of Drift Triodes,"

PERIODICAL: Radiotekhnika i Elektronika, Vol. 2, No. 9, pp. 1221-1224,
1957, (USSR)

For abstract see L.G. Stolyarov

Fedotov, Ya. A.

AUTHOR: Fedotov, Ya.A.

109-10-5/19

TITLE: Influence of the Distribution of Impurities in the Base of Drift Transistors on Their Frequency Characteristics
(Vliyanie raspredeleniya primesey v baze dreyfovых
triodov na ikh chastotnyye svoystva)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, No.10,
pp. 1261 - 1270 (USSR).

ABSTRACT: It has been shown by a number of authors (Refs. 1, 2, 3) that by changing the concentration of the impurities in the base region of a transistor, it is possible to increase the frequency response or the useful operating bandwidth of the device. It appears, however, that no satisfactory treatment of the frequency characteristics of this type of transistor (which is known as the drift transistor) has been given. An attempt is made, therefore, to derive some useful expressions which would provide the basis for the comparison of the drift transistors with similar alloy-junction or grown-junction transistors. Normally, the distribution of impurities in a drift transistor obeys the error function law, but for the purpose of analysis, it can be approximated by an exponential function. The base of a drift transistor is assumed to be in the form of a plate having an overall thickness a with the

Card1/4

109-10-5/19

Influence of the Distribution of Impurities in the Base of Drift Transistors on Their Frequency Characteristics.

maximum impurity concentration N_a and a minimum concentration N_b ; a portion b of the plate is etched and the emitter junction is alloyed to the base at the point where the concentration of the impurities drops to a value N_b (see Fig.2).

The collector junction is alloyed to the opposite side of the plate and its position during the operation of the transistor extends from Point 4 (see Fig.2) to Point 3. It is also assumed that the collector and the emitter are parallel to each other and that the concentration of the acceptors in the collector and emitter region is of the order of 10^{19} cm^{-3} . The analysis is based on the standard uni-dimensional diffusion equation which for the drift transistor is written:

$$KD_p \frac{\partial p}{\partial y'} - D_p \frac{\partial^2 p}{\partial y'^2} = \frac{\partial p}{\partial t} - \frac{1}{\tau_p} [p - p_b e^{-Ky'}]$$

where the term $e^{-Ky'}$ takes into account the variable concentration of the impurities in the base. Solution of the above

Card 2/4

109-10-5/19

Influence of the Distribution of Impurities in the Base of Drift
Transistors on Their Frequency Characteristics.

equation gives an expression for the current amplification factor β of the transistor (see the equation for β on p.1266). It is shown that when the concentration of the impurities in the base is uniform, the expression for β leads to the standard equation representing the gain of an ordinary junction transistor. β is plotted as a function of frequency for various values of N_b/N_1 (see Fig.4); similarly, the cut-off frequency for β is plotted against N_b/N_1 for N_b/N_1 ranging from 1 - 1 000. From the above, it is found that the useful bandwidth of the drift transistor can be 7 to 10 times larger than that of a corresponding alloy-junction transistor. It is also concluded that for $N_b/N_1 < 200$, $\omega_\beta/\omega_{\beta_0} = (N_b/N_1)^{0.5}$ where ω_β and ω_{β_0} are the cut-off frequencies of the drift and the normal transistors, respectively. Similarly, it is shown that the relationship between the maximum amplification frequencies of the two types of transistors, f_{\max} and $f_{\max 0}$ is expressed by:

Card 3/4

109-10-5/19

Influence of the Distribution of Impurities in the Base of Drift
Transistors on Their Frequency Characteristics.

$$\frac{f_{\max}}{f_{\max 0}} = \left(\frac{N_b}{2N_o} \right)^{0.5} \quad (5)$$

The author acknowledges the help extended to him by V.I. Baranov
and G.A. Kubetskoy, B.D. Tazulakhov, Yu.A. Galushkin and
L.S. Yermakova.

There are 4 figures, 1 table and 14 references, 2 of which are
Slavic.

SUBMITTED: February 28, 1957.

AVAILABLE: Library of Congress

Card 4/4

FEDOTOV, Ya. A

Semiconductor electronics. Radio no.11:34-35 N '57. (MIRA 10:10)
(Semiconductors)

9(4)

PHASE I BOOK EXPLOITATION

SOV/1488

Poluprovodnikovyye pribory i ikh primeneniye; sbornik statey, vyp. 3
(Semiconductor Devices and Their Application; Collection of Articles,
Nr 3) Moscow, Izd-vo "Sovetskoye radio," 1958. 350 p. No. of copies
printed not given.

Ed. (Title page): Ya.A. Fedotov; Ed.: (inside book): E.M. Volkova;
Tech. Ed.: A.A. Sveshnikov.

PURPOSE: This collection of articles is intended for radio engineers,
students of vuzes and qualified radio amateurs.

COVERAGE: The articles cover the following subjects: semiconductor
materials, physical processes in semiconductor devices, parameters
and characteristics of semiconductors, manufacture of semiconductor
devices, test equipment and methods, operation of semiconductor de-
vices in amplifier, oscillator and other electronic circuits, various
circuits using semiconductor devices, and radio components for these
circuits. References appear separately after each article.

TABLE OF CONTENTS:

Card 1/12

Semiconductor Devices (Cont.)

SOV/1488

Tuchkevich, V.M. Some Properties and Applications of Silicon 3
The author compares the properties of silicon crystals with those of germanium and enumerates the superior qualities of silicon in semiconductor devices. He discusses the theory of semiconductors and their practical applications. He also explains several methods of growing silicon monocrystals. There are no references.

Rusin, F.S., N.Ye. Skvortsova, and Yu.F. Sokolov. Methods of Determining the Parameters of the Rectifying Contact of Point-Contact Detectors at Super-high Frequencies 13
The authors describe several methods of determining the basic parameters of point-contact detectors. They determine the maximum permissible shf power from parameters obtained by the above methods. They describe methods of measuring the impedance Z and, from its relation to the bias current, derive values for C_0 , r_d and τ . They also explain a method based on the relation between the sensitivity (with respect to the voltage β_u) and the positive bias current. There are 4 references, of which 3 are Soviet and 1 English.

Card 2/12

Semiconductor Devices (Cont.)

SOV/1488

Ukhanov, Yu.I. The Germanium Diode - a Modulator of Infrared Rays 31
The author describes the results of investigations on the modulation of infrared rays by a germanium diode through variation of the concentration of free electric charges in it. He finds that the transparency of germanium diodes decreases with an increase of direct current passing through the diode. The decrease of transparency reaches its maximum in the junction region and depends on the quality of the junction. It is independent of current frequency change in the range 20 cps - 200 kc. The author presents data from an investigation of the recombination glow and photo-emf of the diode at a temperature of 293° K. A lead-sulfite photoresistor was used as a sensor. The author illustrates the modulation effect using a model of a telephone based on the application of infrared rays. There are 8 references, of which 5 are English, and 3 Soviet.

Samokhvalov, M.M., and N.A. Spiridonov. Frequency Properties of Transistors Produced by the Alloy-diffusion Method 47
The author discuss the dependence of cutoff frequency on emitter current in a P-403 type transistor. They also explain the influence of junction capacitances and the resistances of collector

Card 3/12

Semiconductor Devices (Cont.)

SOV/1488

and base circuits on the cutoff frequency. The authors thank Ya.A. Fedotov, Yu.A. Kamemetskiy and Yu.A. Sher for their help. There are 12 references, of which 6 are English, 5 Soviet and 1 German.

Aronov, V.L., and Yu.A. Sher. Frequency Properties of Transistors With Distributed Parameters

75

The authors analyze several variant models of transistors with distributed parameters. They propose a method for investigating various constructions of triodes and present an equivalent circuit of a triode with distributed parameters at high frequency. They also provide numerical examples which illustrate the effect of frequency on the elements of a T-shaped equivalent circuit. There are 7 references, of which 5 are English and 2 Soviet.

Madoyan, S.G., and Yu.I. Konev. Some Problems of Using High Power Transistors

92

The authors discuss some problems connected with the use of P201-P203 type high-power transistor amplifiers with input voltages higher than the maximum rated voltages in the common emitter circuit. There is 1 English reference.

Card 4/12

Semiconductor Devices (Cont.)

SOV/1488

Bandura, V.Ye. Universal Instrument for Measuring h-Parameters of Junction Transistors 96

The author explains the circuit and operation of this instrument. The instrument measures the h-parameters of junction transistors working in a common-emitter circuit. The author provides various examples of measurement. There are no references.

Pershakov, B.N., and P.A. Popov. Instrument for Measuring Alpha in Junction Transistors 104

The authors explain a d-c method of measuring the current amplification factor (α) of a junction transistor. They describe the instrument used for measuring α at low frequencies and the reverse current of the collector. There are no references.

Kulya, V.I. Developing a Pulse Forming Unit Equipped With Junction Transistors for Cathode-Ray Curve Tracer 110

The author describes the results obtained in developing the unit. The unit is used in forming families of characteristics of non-linear pulses (the step and saw-tooth types). Such a family should contain 5 to 14 characteristics. This pulse forming unit was developed, assembled and put into operation by the radio en-

Card 5/12

Semiconductor Devices (Cont.)

SOV/1488

Kozlov, V.A. Determining the Cutoff Frequency of Transistors With an Oscilloscope

148

The author describes in detail an adapter for the IChKh instrument, which makes it possible to measure the cutoff frequencies of transistors. He also describes an apparatus for grading of transistors with respect to their cutoff frequencies. Both instruments give direct readings and are suitable for transistors with any value of α_e . This apparatus is based on a method proposed by F.A. Shchigol', which applies two simultaneous input pulses of high and low frequency. There are no references.

Pavlov, V.V. Practical Calculation of Set Noises in Radio Equipment Using Junction Transistors

162

The author explains a practical method of calculating the noise factor of radio equipment using germanium junction transistors. He also discusses methods for reducing set noise. There are 4 references, all English.

Ukhin, N.A. Voltage Regulators Using Transistors

175

The author describes in detail the operating principle of semiconductor voltage regulators. He provides formulas for practical

Card 7/ 12

Semiconductor Devices (Cont.)

SOV/1488

cal calculation and evaluation of basic parameters of the circuits shown. There are 10 references, of which 6 are English, 3 Soviet and 1 French.

Novitskiy, P.V., G.N. Novopashennyy, I.A. Zograf, and Ye.P. Osadchyy. Measuring Amplifiers Equipped With Transistors 196
The authors describe methods of designing high-stability measuring amplifiers equipped with transistors. They were developed in the Laboratoria fiziko-tehnicheskikh izmereniy under Professor Ye.G. Shramkov (LPI). The authors discuss the results of investigations on the pre-amp and output stages of these amplifiers, on amplifiers with a high input resistance, and on filters equipped with transistors instead of reactance tubes. There are 2 references, of which 1 is Soviet and 1 English.

Konev, Yu.I. Semiconductor Amplifiers for Servomechanisms 209
The author discusses several systems of amplifier circuits with junction transistors used in the most common types of servomechanisms. He explains the design of such an amplifier and indicates its various applications. He thanks B.A. Tonakanov for his help in developing one of the stages. There are 6 references,
Card 8/12

Semiconductor Devices (Cont.)

SOV/1488

all Soviet (including 1 translation).

Nikolayenko, N.S. Semiconductor Signal Amplifier 227

The author describes the circuit and construction of this amplifier and describes the results of tests on several models of the amplifier under various operating conditions. The apparatus contains an a-c three-stage directly coupled power amplifier, a pulse phasing stage, a trigger and an output switching stage. There is 1 Soviet reference.

Nikolayenko, N.S., and G.V. Kalliopin. An Amplifier With Output to a Reversible Motor

237

The author describes a transistor amplifier with its output to an RD-09 type reversible motor and designed for operation in automatic devices. He discusses the selection of circuits and operating conditions of the various stages and describes the results of tests on the amplifier alone and together with the equipment. He also briefly explains the construction of the amplifier. There is 1 English reference.

Card 9/12

Semiconductor Devices (Cont.)

SOV/1488

Sevbo, G.S., and L.A. Volkov. Low-frequency Amplifier With P-4 Type Transistors for Servomechanisms 247
The authors describe a high-power low-frequency amplifier employed in servo systems. They also present a practical calculation of parameters of the output stage. There are 2 references, of which 1 is Soviet and 1 English.

Gavra, T.D., and V.I. Biryukov. Frequency Stability of L-F Oscillators With Junction Transistors 253
The authors discuss the frequency stability of oscillators using junction transistors and explain the changes of transistor parameters caused by temperature changes in the range 20°-60°C. They also discuss the possibilities of compensation for frequency drift in this temperature range. There are 4 references, of which 2 are Soviet and 2 English.

Abzianidze, K.M. Triggering and Dynamic Characteristics of Transistorized Triggers 271
The author analyzes the operation of a trigger by investigating its dynamic and triggering characteristics. He presents formulas which make possible the design of triggers for opera-

Card 10/12

Semiconductor Devices (Cont.)

SOV/1488

tion throughout a wide range of ambient temperatures. An example of the design of a trigger is included. There are 5 references, of which 3 are Soviet and 2 English.

Garmash, V.P. Frequency Division by Means of Transistorized Blocking Oscillators

295

The author describes the operation of transistorized blocking oscillators used for frequency division. He makes recommendations on the calculation and selection of parameters and provides several practical circuit diagrams. There are 3 references, of which 2 are English and 1 Soviet.

Konev, Yu.I. Semiconductor Functional Pulse Converters

306

The author describes an inductively coupled transistor relaxation oscillator and discusses its possible applications in automation. There are no references.

Oliferenko, G.I. Transistorized Television Sweep Oscillator

322

The author describes a sweep oscillator comprising three transistors and one semiconductor diode for feeding an LI-18 pick-up tube. The circuit contains a saw-tooth generator and a

Card 11/12

FEFOTOV, Ya. A.

9(4) 24(6) b.3

PHASE I BOOK EXPLOITATION

sov/1765

Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektronsvyazi

Poluprovodnikovaya elektronika (Semiconductor Electronics) Moscow,
Gosenergoizdat, 1959. 222 p. 13,950 copies printed.

Ed.: V.I. Shamshur; Tech. Ed.: K.P. Voronin.

PURPOSE: The book is intended for engineering and technical personnel working with semiconductor devices.

COVERAGE: The book is a collection of lectures delivered at the All-Union Seminar on Semiconductor Electronics in March 1957. The seminar was organized by the Scientific and Technical Society of Radio Engineering and Electrical Communications imeni A.S. Popov. The authors of the lectures have attempted to systematize the basic information on the operation of semiconductor devices. The articles describe the operation and characteristics of crystal diodes and transistors and discuss their application in various low-frequency, high-frequency and pulse circuits. No personalities are mentioned. References appear at the end of each article.

Card 1/7

Semiconductor Electronics

SOV/1765

TABLE OF CONTENTS:

Foreword	3
Ye.I. Gal'perin. Basic Physical Concepts The author discusses the physical aspects of semiconductor materials. He describes the atomic structure of the various elements and presents a discussion of energy levels in metals and dielectrics. There are 13 Soviet references (including 4 translations).	5
N.A. Penin. Electrical Properties of Semiconductors The author gives a brief description of semiconductors, such as selenium, tellurium, and germanium. Particular attention is paid to the atomic structure of germanium crystals and to conduction in crystals with and without impurities.	25
N.Ye. Skvortsova. Semiconductor Crystal Diodes The author discusses the construction and operation of point-contact and junction-type crystal diodes. She also presents methods of making rectifying contacts and describes the effect	32

Card 2/7

Semiconductor Electronics

SOV/1765

of temperature on diode operation. There are 2 Soviet references (including 1 translation).

Ya. A. Fedotov. Triode Transistors

42

The author briefly discusses the theory of junction-type and point-contact transistors. Chief attention is given to the theoretical and operational aspects of junction-type transistors. The author discusses the characteristics of junction-type triode transistors and describes the effect of frequency on transistor parameters. He also describes transistor power amplification and discusses methods of obtaining high operating frequencies. A brief description of junction-type tetrode transistors is also presented. There are 7 Soviet references (including 5 translations).

Ye. I. Gal'perin. Triode Transistor as an Amplification Circuit Element

87

The author discusses the construction, operation and application of triode transistors. He describes various methods of transistor connection and gives expressions for equivalent circuits and transistor parameters. There are 6 Soviet references

Card 3/7

Semiconductor Electronics

SOV/1765

(including 1 translation).

V.I. Gevorkyan. Stabilization of Power Supply Circuits of Triode Transistor Amplifiers

105

The author discusses methods of stabilizing the operation of bias circuits and describes an analytical method of calculating transistor performance. He also presents a graphical method of determining the quiescent point and discusses transistor circuits with automatic bias. There are no references.

A.G. Fillipov. Direct-coupled Amplifiers

117

The author describes the operation of d-c transistor amplifiers and discusses their operating characteristics. He also describes methods of stabilizing transistor operation by using negative feedback, balanced and bridge circuits. There are 10 references of which 1 is Soviet and 9 English.

Yu.I. Konev. Triode Transistors in Amplification Circuits of Servomechanism Systems

132

The author discusses the application and operation of transistors in servomechanism circuits. Emphasis is placed on a dis-

Card 4/7

Semiconductor Electronics

sov/1765

cussion of servomechanism transistor components, such as a-c amplifiers, modulators, and phase-sensitive amplifiers. There are 7 references of which 6 are Soviet (including 1 translation), and 1 English.

A.A. Kulikovskiy. High-frequency Transistor Amplifiers

151

The author discusses equivalent circuits of high-frequency transistor amplifiers and describes methods of calculating their parameters. He describes the operation of interstage resonant circuits and examines the effect of feedback in transistor circuits. He also discusses transistor stability, stabilizing networks for the internal feedback in transistor circuits and the noise factor. There are 15 references of which 3 are Soviet, 1 German and 11 English.

T.M. Agakanyan. Transient and Frequency-Phase Characteristics of a Junction-type Triode Transistor

173

The author discusses transient, frequency and phase characteristics of junction-type triode transistors. He also derives expressions for transfer functions for various types of transistor connections and describes the equivalent circuit for high

Card 5/7

Semiconductor Electronics

SOV/1765

frequencies for a junction-type triode transistor. There are 8 references of which 2 are Soviet (including 1 translation), and 6 English.

T.M. Agakhanian. Triode Transistor Video Amplifiers

187

The author discusses linear and nonlinear distortions in transistor video amplifiers and describes circuits with complex feedback and current distributing networks. A brief discussion of multistage amplifiers is also presented. There are 2 references, both Soviet.

B.N. Kononov. Trigger and Relaxation Circuits Using Junction-type Triode Transistors

197

The author describes the operation and characteristics of symmetrical triggers and multivibrators using junction-type transistors. He also discusses their stability and derives expressions for calculating transistor circuit performance. There are 4 references of which 3 are Soviet and 1 English.

G.S. Tsykin. Transistor Inverter of D-C Voltages

208

The author discusses the operation and characteristics of in-
Card 6/7

Semiconductor Electronics

SOV/1765

verter circuits using transistors. Special attention is given to the operation and design of inverter circuits with a signal generator. There are no references.

B.N. Kononov. Voltage Stabilizers Using Semiconductor Devices 215
The author discusses voltage stabilizing circuits using silicon crystal diodes and transistors. He also explains equations for series and feedback stabilization and discusses transistor stabilizing circuits with temperature compensation. There are 4 references of which 1 is Soviet and 3 English.

AVAILABLE: Library of Congress

JP/sfm
5-26-59

Card 7/7

AUTHOR: Fedotov, Ya.A.

SOV/109-4-4-18/24

TITLE: Investigation of Certain Characteristics of the Drift Transistors with a Wide Collector Junction (Issledovaniye nekotorykh svoystv dreyfovykh triodov s shirokim kollektornym perekhodom)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 4,
pp 710 - 717 (USSR)

ABSTRACT: The base region of the investigated transistors was obtained by the diffusion of antimony into germanium. The impurity distribution could be sufficiently accurately approximated by the exponential law. First, the current amplification factor α was investigated. The curves of α as a function of frequency are shown in Figures 1 and 2, for various values of the emitter current. The curves of Figure 1 were taken at the collector voltage of 30 V, while those of Figure 2 were taken at a voltage of 10 V. Figure 3 shows the cut-off frequency, f_α , as a function of the collector voltage u_k for various transistor samples;

Card1/3 these curves were taken at the emitter current of 0.6 mA.

SOV/109-4-4-18/24
Investigation of Certain Characteristics of the Drift Transistors
with a Wide Collector Junction

Also, it was found that at u_k of the order of 20 V, the collector capacitance was of the order of 0.5 to 1.0 pF; at collector voltages of the order of 5 V, the capacitance increased to about 10 pF and at voltages of 1 V, it was about 20 pF. The total base resistance of the transistor was measured as a function of frequency and the collector voltage. The results are shown in Figures 4 and 5 for two different transistors. The base resistance in the figures is plotted against frequency with the collector voltage as a parameter. The transistors were also investigated in resonant amplifiers. The results are illustrated in Figure 7, where the maximum available amplification is plotted as a function of frequency. The results are in good agreement with the Pritchard formulae (Refs 7,8).

Card2/3

Investigation of Certain Characteristics of the ^{Sov/100-47-18/24} Drift Transistors
with a Wide Collector Junction

There are 7 figures, 1 table and 12 references, 11 of
which are English and 1 Soviet.

SUBMITTED: September 26, 1957

Card 3/3

KOBZEV, V.V.; SHISHMAKOV, V.N.; FEDOTOV, Ya.A., kand.tekhn.nauk, red.;
LARIONOV, G.Ye., tekhn.red.

[Transistorized radio receiver stages] Kaskady radiopriemnikov
na tranzistorakh. Moskva, Gos.energ.izd-vo, 1960. 271 p.

(MIRA 13:12)

(Transistor circuits) (Transistor radios)

FEDOTOV, Ya.A., otd.red.; BARIANOV, N.A., red.; BERGEL'SON, I.G., red.;
BROYDE, A.M., red.; GAL'PERIN, Ye.I., red.; KAMENETSKIY, Yu.A.,
red.; KAUSOV, S.F., red.; KONEV, Yu.I., red.; KRASILOV, A.V.,
red.; KULIKOVSKIY, A.A., red.; NIKOLAYEVSKIY, I.F., red.;
STEPANENKO, I.P., red.; VOLKOVA, I.M., red.; SMUROV, B.V.,
tekhn.red.

[Semiconductor devices and their applications] Poluprovodni-
kovye pribory i ikh primenenie; sbornik statei. Moskva, Izd-vo
"Sovetskoe radio". No.6. 1960. 333 p. (MIRA 13:12)
(Semiconductors) (Transistors)

YEDOTOV, Ya.A., otv.red., GAL'PERIN, Ye.I., zamestitel' otv.red.; BARKANOV, N.A., red.; BERGEL'SON, I.G., red.; BRODNE, A.M., red.; KAMCHETSKIY, Yu.A., red.; KAUSOV, S.F., red.; KRASILOV, A.V., red.; KULIKOVSKIY, A.A., red.; NIKOLAYEVSKIY, I.F., red.; PENIN, N.A., red.; STEPANENKO, I.P., red.; VOLKOVA, I.M., red.; SVESHNIKOV, A.A., tekhn.red.

[Transistor devices and their applications; collection of articles]
Poluprovodnikovye pribory i ikh primenenie; sbornik statei. Moskva,
Izd-vo "Sovetskoe radio." No.4. 1960. 423 p. (MIRA 13:5)
(Transistors) (Electronic circuits)

PHASE I BOOK EXPLOITATION

SOV/4817

Fedotov, Yakov Andreyevich, and Yuriy Vasil'yevich Shmartsev

Tranzistory (Transistors) Moscow, Izd-vo "Sovetskoye radio," 1960. 429 p. No. of copies printed not given.

Ed.: N.Ya. Arenberg; Tech. Ed.: B.V. Smurov.

PURPOSE: This book is intended for students of advanced courses at radio-engineering departments of schools of higher education and for engineers concerned with developing and designing transistorized circuits.

COVERAGE: The authors discuss basic physical processes connected with transistors, analyze problems of semiconductor conductivity, and describe the technology of semiconductor materials such as germanium and silicon. Consideration is given to the measurement of semiconductor parameters which are important in the manufacturing processes of semiconductor devices. The book contains detailed information relating to contact phenomena in semiconductors, principles of semiconductor-device operation in radio-engineering equipment, and the relationships between basic parameters of a device with physical magnitudes determining the electronic processes in the device. The book includes discussions on equivalent transistor circuits operated at low and high frequency. The dependence of

Card 1/6

Transistors

SOV/4817

the parameters of the transistors on frequency is evaluated and methods of measuring these parameters at low and high frequencies are analyzed. The technology of manufacturing various types of transistors is described. Parameters of Soviet and non-Soviet semiconductor devices are listed in tabular form. Chapters II and III, and Sections 1 and 2 of Chapter VIII were written by Yu.V. Shmartsev. Ya.A. Fedotov wrote the remaining chapters. The authors thank A.A. Kulikovskiy, Docent, Candidate of Technical Sciences, for his help in editing the book. References accompany each chapter.

TABLE OF CONTENTS:

Ch. I. Fields of Application and Prospects for Development of Semiconductor Devices	
1. History of the development of semiconductor techniques	5
2. Prospects for the technical application of transistors	10
Ch. II. Conductivity of Semiconductors	19
1. Classification of solids according to their conductivity	19
2. Semiconductors	31
3. Model of valence bonds	33
4. Effect of impurities on semiconductor conductivity	37

Chad 2/6

FEDOTOV, Ya.A., red.; VOLKOVA, I.M., red.; SMUROV, B.V., B.V., tekhn. red.

[Semiconductor devices and their application; collected articles]
Poluprovodnikovye pribory i ikh primenie; sbornik statei. Mo-
skva, Izd-vo "Sovetskoe radio," No.7. 1961. 358 p. (MIRA 14:10)
(Transistors) (Semiconductors)

PEDOTOV, Ya., kand.tekhn.nauk

Physical principles of the operation of semiconductor devices.
Radio no.4:36-39 Ap '62. (MIRA 15:4)
(Semiconductors) (Transistors)

FEDOTOV, Ya., kand.tekhn.nauk

Physical principles of the operation of semiconductor devices.
Radio no.5:33-37 My '62. (MIRA 15:5)
(Transistors)

FEDOTOV, Ya.A., otv. red.; BERGEL'SON, I.G., red.; GAL'PERIN, Ye.I.,
zam. otv. red.; KAMENETSKIY, Yu.A., red.; KAUSOV, S.F., red.;
KONEV, Yu.I., red.; KRASILOV, A.V., red.; KULIKOVSKIY, A.A.,
red.; NIKOLAYEVSKIY, I.F., red.; STEPANENKO, I.P., red.;
VOLKOVA, I.M., red.; BELYAYEVA, V.V., tekhn. red.

[Semiconductor devices and their applications] Poluprovodnikovye
pribory i ikh primenenie; sbornik statei. Pod red. IA.A.Fe-
dotova. Moskva, Izd-vo "Sovetskoe radio." No.8. 1962. 332 p.
(MIRA 15:10)

(Transistors)

FEDOTOV, Ya., kand.tekhn.hauk

Transistor devices with many applications. Radio no. 12:38-43 D '62.
(MIRA 16:3)

(Transistors)

FEDOTOV, Yakov Andreyevich, kand. tekhn. nauk; IVANOV, S., red.;
NAZAROVA, A., tekhn. red.

[Towards microelectronics] Na puti k mikroelektronike.
Moskva, Izd-vo "Znanie," 1963. 45 p. (Novoe v zhizni,
nauke, tekhnike. IV Seriya: Tekhnika, no.7) (MIRA 16:4)
(Miniature electronic equipment)

FEDOTOV, Yakov Andreyevich, dots., kand. tekhn. nauk; VOLKOVA, I.M.,
red.; ELYAYEVA, V.V., tekhn. red.

[Physical principles of semiconductor devices] Osnovy fiziki
poluprovodnikovykh priborov. Moskva, Sovetskoe radio, 1963.
(MIRA 16:7)
653 p.
(Semiconductors) (Transistors)

FEDOTOV, Ya.

Reply to M. Andronov's letter. Radio no. 1:50-51 Ja '63.
(MIRA 16:1)
(Transistors—Standards)

FEDOTOV, Ya.A., red.; VOLKOVA, I.M., red.; BELYAYEVA, V.V.,
tekhn. red.

[Transistor devices and their applications] Poluprovodniko-
vye pribory i ikh primenenie; sbornik statei. Pod red.
IA.A.Fedotova. Moskva, Sovetskoe radio. No.9. 1963. 269 p.
(MIRA 16:5)

(Transistors)

FEDOTOV, Ya.A., red.; VOLKOVA, I.M., red.

[Transistor devices and their application; a collection of articles] Poluprovodnikovye pribory i ikh primenie; slownik statei. Moskva, Izd-vo "Sovetskoe radio." No.11. 1964. 296 p. (MIRA 17:7)

SPIRIDONOV, Nikolay Spiridonovich; VERTOGRADOV, Vladimir Ivanovich;
KAMENETSKIY, Yu.A., kand. tekhn. nauk, retsenzent;
FEDETOV, Ya.A., retsenzent; VOLKOVA, I.M., red.

[Drift transistors] Dreifovye tranzistory. Moskva, Sovet-
skoe radio, 1964. 304 p. (MIRA 17:10)

FEDOTOV, Ya.A., red.; VOLKOVA, I.M., red.

[Semiconductor devices and their applications] Polu-
provodnikovye pribory i ikh primenenie; sbornik statei.
Moskva, Sovetskoe radio. No.12. 1964. 263 p.
(MIRA 17:12)

FEDOTOV, Ya.A., otv. red.; VOLKOVA, I.M., red.

[Semiconductor devices and their applications] Polu-
provodnikovye pribory i ikh primenenie; sbornik statei.
Moskva, Sovetskoe radio. No.12. 1964. 263 p.
(MIRA 18:1)

L-55154-65

ENT(1)/EEC(k)-2/T/EEC(b)-2/EEA(h) Pm-4/Pz-6/Peb IJP(c) AT

ACCESSION NR AM5005929

BOOK EXPLOITATION

UR/

621.382.1

39

Fedotov, Yakov Andreyevich (Broeijt; Candidate of Technical Sciences)

B+1

Principles of the physics of semiconductor devices (Osnovy fiziki poluprovodnikovykh priborov), Moscow, Izd-vo "Sovetskoye radio", 1964, 655 p. illus., biblio. 2nd ed., rev. and enl. of Transistor by Ya. A. Fedotov and Yu. V. Shmatsov. 90,001 copies printed.

TOPIC TAGS: semiconductor device, Zener diode, transistor, electric property, semiconductivity, pn junction, electronic circuit

PURPOSE AND COVERAGE: This monograph examines physical processes in semiconductor devices which determine their parameters and characteristics, peculiarities of circuit application, stability of parameters of semiconductor devices, and their reliability. A short description of the principle electrophysical properties of semiconductor materials is given along with basic information about the construction and technology of semiconductor devices and perspectives for the development of semiconductor technology. The book is intended for students of higher learning institutions and engineering-technical personnel specializing in the area of developing semiconductor materials, semiconductor devices and electronic systems which use semiconductor devices.

Card 1/3

L 55154-65
ACCESSION NR AM5005929

TABLE OF CONTENTS (abridged):

From the author --	3
Introduction. A history of the development of semiconductor technology --	6
Ch. I. Electophysical properties of semiconductors --	13
Ch. II. Contact phenomena in semiconductors --	65
Ch. III. PN junction --	93
Ch. IV. Power supply diodes; Zener diodes; pulse diodes --	133
Ch. V. Special diodes --	164
Ch. VI. Junction and point-contact transistors --	208
Ch. VII. Basic characteristics of the operation of transistors in circuits --	270
Ch. VIII. Equivalent circuits and low-frequency transistor parameters. Methods of measuring parameters --	338
Ch. IX. Dependence of junction triode parameters on frequency --	376
Ch. X. Operation of high-frequency junction transistors --	410
Ch. XI. Methods of increasing operational frequencies. High-frequency transistors --	441
Ch. XII. Some special semiconductor devices --	497
Ch. XIII. Technology and construction of semiconductor devices --	527

Card 2/3

L 55154-65

ACCESSION NR AM5005929

Ch. XIV. Reliability and stability of semiconductor devices — 566

Ch. XV. The present state of semiconductor electronics and the principle paths of its development — 616

Supplements — 644

Bibliography — 651

SUBMITTED: 11Jun64

SUB CODE: EC, SS

NO REF Sov: 019

OTHER: 008

Card 3/3

FEDOTOV, Ya.A. kand. tekhn. nauk, otv. red.

[Semiconductor devices; terminology] Poluprovodnikovye pribory; terminologiya. Moskva, Nauka, 1965. 49 p. (Sborniki rekomenduemykh terminov, no.69) (MIRA 18:8)

1. Akademiya nauk SSSR. Komitet nauchno-tehnicheskoy terminologii.

GEYNISMAN, G.V., inzh.; YEDOTOV, Ya.V., inzh.

Stability of polymetal rods. Sudestraneie 25 no.4:13-15 Ap. '59.
(MIRA 12:6)

(Elastic rods and wires)

NECHAYEV, G.A.; FEDOTOV, Ye.D.; BELYAYEV, L.N., kand. tekhn.
nauk, nauchn. red.

[Use of plastics for waterproofing buildings] Primenenie
plasticheskikh mass dlja gidroizoljatsii zdanii. Lenin-
grad, Stroizdat, 1965. 175 p. (MIRA 18:7)

FEDOTOV, Yekaterina Dmitriyevna; GUMEROVA, R.I., dcts., red.;
KUSURGASHEV, I.M., red.

[Seasonal freezing of the soil in the Tatar A.S.S.R. and
adjacent areas in the middle Volga Valley] Sezonnoe pro-
merzanie pochvy v Tatarskoi ASSR i izmezhnykh oblastiakh
Srednego Povolzh'ya. Kazan', Izd-vo Kazanskogo univ., 1965.
198 p. (MIRA 18:12)